
Cinnamodendron occhionianum, a New Species of Canellaceae from Brazil

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ABSTRACT. A new species belonging to the genus *Cinnamodendron* Endlicher (Canellaceae) is described: *C. occhionianum* F. Barros & J. Salazar. The new species is known only from Cardoso Island off the coast of southeastern Brazil. It is similar to *C. axillare* Endlicher ex Walpers and *C. sampaioanum* Occhioni, but differs from the former by the fasciculate inflorescence and dark purple flowers, and from the latter by the nonplicate apex of the leaves and a shorter fruit pedicel. It also resembles *C. dinisii* Schwacke in its vegetative features, but differs from it mainly by the flowers with 10 petals, 10 stamens, and ovary with two placentae.

RESUMO. Uma nova espécie do gênero *Cinnamodendron* Endlicher (Canellaceae) é descrita e ilustrada, com o nome *C. occhionianum* F. Barros & J. Salazar. A nova espécie é conhecida, até o momento, somente da Ilha do Cardoso, no litoral sudeste do Brasil. Ela é próxima de *C. axillare* Endlicher ex Walpers e *C. sampaioanum* Occhioni, mas difere da primeira pela inflorescência em fascículo e flores purpúreas, e da segunda pelo ápice das folhas não plicado e pedicelo dos frutos mais curto. Lembra *C. dinisii* Schwacke no seu aspecto vegetativo, mas difere principalmente pelas flores com 10 pétalas, 10 estames e ovário com duas placentas.

Key words: Brazil, Cardoso Island, Canellaceae, *Cinnamodendron*, IUCN Red List.

Canellaceae is a small tropical family with ca. 21 species in six genera. Six species belonging to the two genera, *Canella* P. Browne and *Cinnamodendron* Endlicher, have been found in South America so far. Only *Cinnamodendron* is represented in Brazil, and its distribution extends into French Guiana, Suriname, and Venezuela. *Capsicodendron* Hoehne, a monotypic genus from Brazil described by Hoehne (1934), has been shown to be a synonym of *Cinnamodendron*

(Hutchinson, 1964; Barroso et al., 1978; Salazar, 2006).

Cinnamodendron is characterized by axillary inflorescences with flowers that are mainly fasciculate, rarely racemiform to corymbiform, with three conspicuous bracts, three sepals, six to 10 free petals (generally 10) arranged in two series, eight to 10 stamens (commonly 10), two or three carpels, two or three placentae, few ovules (four to six), and small fruit up to 1.5 cm in diameter (one of the smaller fruits in the family). The fruit is commonly stipitate with few seeds (one to six) that are embedded in a gelatinous pulp and do not have a ruminant endosperm.

Five species of *Cinnamodendron* are currently recognized (Salazar, 2006): *C. axillare* Endlicher ex Walpers, *C. dinisii* Schwacke, *C. sampaioanum* Occhioni, *C. tenuifolium* Uittien, and *C. venezuelense* Steyermark. The first three species occur in Brazil, where the highest diversity of the genus is found (Salazar, 2006). Herein, a sixth species (fourth for Brazil) for the genus is described, based on collections from the state of São Paulo, southeastern Brazil.

Cinnamodendron occhionianum F. Barros & J. Salazar, sp. nov. TYPE: Brazil. São Paulo: Cananéia, Ilha do Cardoso, 12 Aug. 2004 (fl., fr.), F. Barros, J. Salazar & R. P. Romanini 3080 (holotype, SP; isotypes, BH, MO). Figure 1.

Affine *Cinnamodendron axillari* Endlicher ex Walpers sed floribus fasciculatis purpureis differt; affine etiam *C. sampaioano* Occhioni sed apice foliorum non plicato atque pedicellis fructuum brevioribus differt; etiam simile *C. dinisii* Schwacke sed petalis staminibusque 10 atque ovario placentis 2 et ovulis 4 differt.

Tree, 8–20 m tall; bark brownish gray with abundant rounded reddish brown lenticels. Leaves with petiole contorted at the base, canaliculate above, 5–10 mm; blade \pm symmetrical, bicolored, oblong-lanceolate to obovate-lanceolate, apex obtuse to

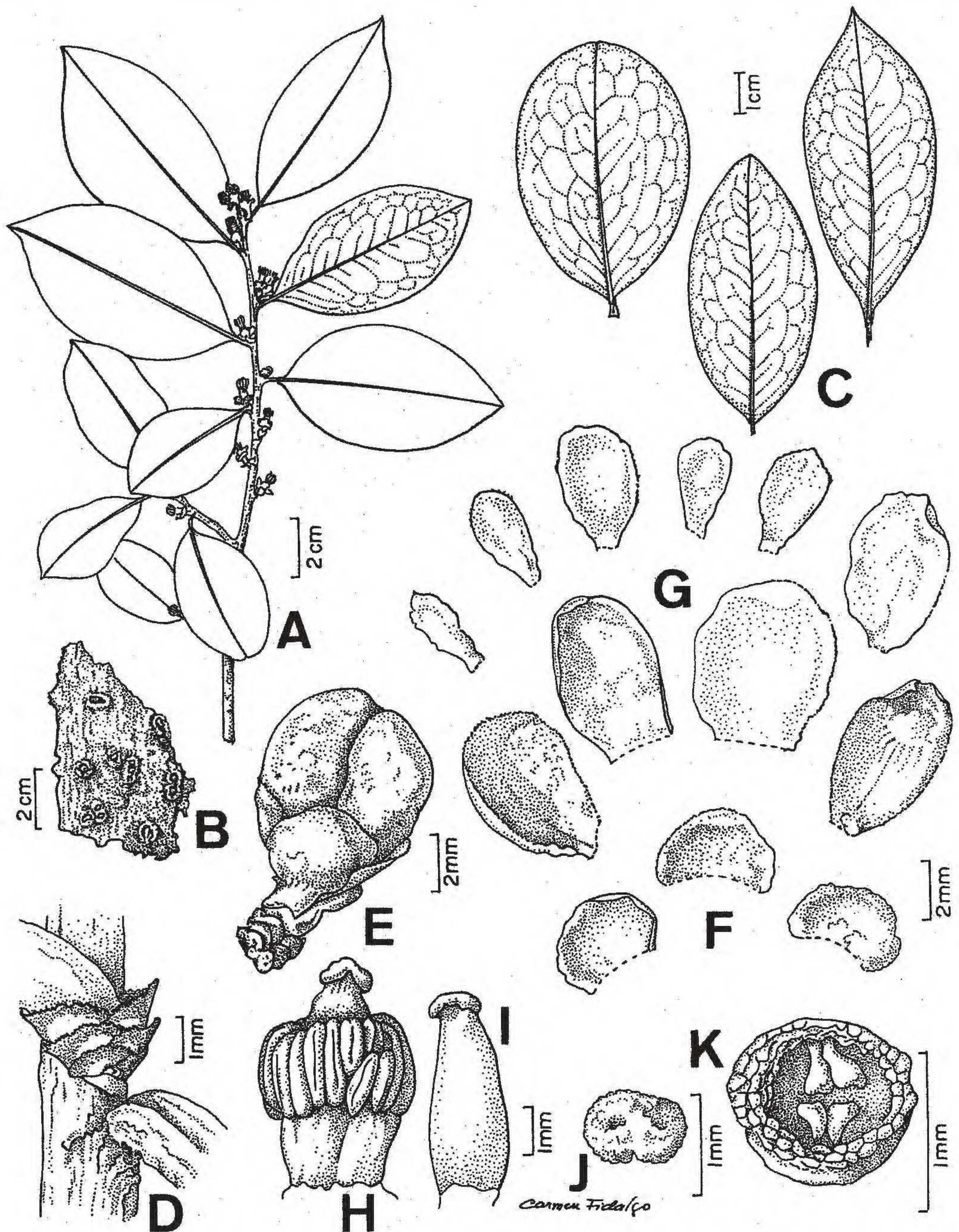


Figure 1. *Cinnamodendron ochionianum* F. Barros & J. Salazar. —A. Flowering branch. —B. Detail of the bark, showing lenticels. —C. Variation of leaf forms. —D. Leaf axil and base of the inflorescence, showing the imbricate bracts. —E. Flower bud. —F. The three sepals. —G. The 10 petals, the innermost ones above. —H. Staminal tube surrounding the gynoecium. —I. Gynoecium. —J. Stigma viewed from above. —K. Ovary in transverse section, showing the ovules. Drawn from F. Barros & L. Rossi 1884 (SP).

acuminate, base obtuse to attenuate; chartaceous, glabrous, glandular dotted on both surfaces, with the glands more prominent abaxially, (3.5–)8–11(–15) × (2–)2.9–5(–6.5) cm, adaxial surface glossy and dark,

abaxial surface opaque and pale; midvein prominent abaxially, 8 to 10 secondary veins on each side, slightly impressed adaxially, but prominent abaxially; stomata brachyparacytic. Inflorescence as fascicles of

Table 1. Principal differences among the four Brazilian species of *Cinnamodendron*.

	<i>C. occhionianum</i>	<i>C. axillare</i>	<i>C. dinisii</i>	<i>C. sampaioanum</i>
Inflorescence	fascicle of 1 to 4 flowers	raceme of 3 to 8 flowers	fascicle of 2 to 6 flowers	solitary flowers or fascicle of 2 to 3 flowers
Flower color	dark purple	whitish cream	dark purple	purple
Leaf apex	obtuse to acuminate, not plicate	acute to subacuminate, not plicate	obtuse to rounded, not plicate	acute, plicate
Flower pedicel length, mm	2–5	4–5	7–9	3–6
Fruit pedicel length, mm	2–5	8–10	5–7	5–9
No. of petals	10	10	6	10
No. of placentae	2	2	3	2
No. of stamens	10	10	(8)9(10)	10

few flowers (1 to 4); peduncle glabrous, glandular-punctate, with bracts and bracteoles subcoriaceous, caducous, imbricate, slightly ciliolate at the margin and glandular-punctate. Flowers with pedicels 2–5 mm, with glabrous, glandular-punctate, imbricate bracteoles at the base; flowers small, pentamerous, subsessile; sepals 3, green, suborbiculate to orbiculate, 2–3 × 3–4 mm, margin entire to slightly ciliolate; petals 10, free, in 2 series of 5, imbricate, dark purple, fleshy, glandular-punctate, margin slightly ciliolate, the outer 5 petals larger and thicker, 6–7 × 4–5 mm, obovate, the internal 5 petals smaller, more membranaceous, with more glandular punctations, 4–5 × 2–3 mm, obovate to spatulate; androecium with 10 stamens, fused into a staminal tube and monadelphous, 4–5 mm, the base of the staminal tube 3.2–4.5 mm; anthers 1–1.8 mm, inequilateral, apically truncate; gynoecium cylindrical, 5–7 mm; stigma capitate, papillate, bilobate, placentae 2, ovules 4. Fruit a stipitate berry, ca. 1.5 × 1.3–1.5 cm, ± globose, dark purple; pedicels 2 to 5; seeds 2 to 4, dark brown, embedded in a gelatinous pulp, ca. 10 × 8 mm; endosperm not ruminant.

Distribution and ecology. *Cinnamodendron occhionianum* is a tree up to 8–20 m, endemic to Brazil and collected only in São Paulo State from Cardoso Island. It is found in the Atlantic Forest at 120–200 m along the hillsides of the River Perequê cliffs.

IUCN Red List category. *Cinnamodendron occhionianum* should be considered Data Deficient (DD) according IUCN Red List criteria (2001). A number of trees of *C. occhionianum* are known from the forests of Cardoso Island, but no objective measure of its range of distribution or information on the density and size of its population are available. However, because of Cardoso Island's status as a state park, the species is most likely not endangered at this time.

Phenology. The new species has been collected flowering and fruiting from August to November.

Etymology. *Cinnamodendron occhionianum* is named in honor of Paulo Occhioni (1915–2000), the Brazilian botanist who extensively studied the family Canellaceae in Brazil.

Local names and uses. The popular name of the species is “paratudo,” from the Portuguese meaning “for all.” Its bark is used to aromatize and dye cachaça, a popular Brazilian alcoholic beverage, which is often used to treat rheumatism (Barros, 2000).

Diagnostic features. *Cinnamodendron occhionianum* is similar to *C. axillare* and *C. sampaioanum*, but differs from the former by the fasciculate inflorescence and the dark purple flowers, and from the latter by the nonplicate apex of the leaves and the shorter fruit pedicel. It also resembles *C. dinisii* in its vegetative features and has been frequently confused with it in both literature and herbaria; however, it differs in the flowers that have 10 petals, 10 stamens, and an ovary with two placentae. The differences among these species are summarized in Table 1.

Paratypes. BRAZIL. **São Paulo:** Cananéia, Ilha do Cardoso, trilha para a captação de água, 3 Dec. 1990 (fr.), F. Barros 2016 (SP); trilha entre a barragem e Ipanema, 9 May 1990, F. Barros s.n. (SP238607); trilha para a barragem, 11 Nov. 1990 (fl.), F. Barros & L. Rossi 1884 (SP); mata da estrada da captação às margens do Rio Perequê, 28 Nov. 1989 (fr.), M. R. F. Melo & J. A. Correa 727 (SP); morro de captação de água, 20 Aug. 1987, M. R. F. Melo & A. Penina 917 (SP).

Acknowledgments. Financial support for this research was given to Jackeline Salazar by the International Association for Plant Taxonomy (IAPT); the American Society for Plant Taxonomists (ASPT); the Mario Einaudi Center for International Studies, Latin American Studies Program (Cornell University)/Tinker Graduate Student Field Research Grants (Cornell University); and the Linnean Society of London. Fábio de Barros was supported by a grant

from Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq). We thank Marcela Martínez Millán for her useful comments, and Carmen S. Zocchio Fidalgo for the drawing of the new species.

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